

## **AMENDMENTS TO THE SPECIFICATION**

Please amend the paragraph beginning on page 4, line 19 as follows:

As mentioned previously uterine activity occurs throughout pregnancy with action potentials occurring from a very early stage. Various types of properties and waveforms have been attributed to electrical myometrial activity as discussed by Devedeux et al, Am J Obstet Gynecol, 1993, "Uterine Electromyography: A Critical Review", these can be described as (1) Slow Waves or (2) Fast Waves as follows. Slow Waves (1), ~~which~~ tend to be associated with abdominal uterine measurements, rather than in vivo measurements, and are therefore assumed to be generated by mechanical artefacts such as skin stretching, their period typically equal to the contraction duration; (2) Fast Waves, Devedeux et al. ~~duration. Fast Waves,~~ authors have separated into a low frequency band (0.1-0.6 Hz) associated with uterine contractions during pregnancy and parturition and a high frequency band (0.6-3 Hz) associated with progressive contractions during parturition only. Devedeux et al conclude that there are no fixed pacemaker sites: instead, like cardiac cells, myometrial cells can be excited by action potentials generated from a neighbouring cell (pacemaker follower cells) or generate their own impulses (pacemaker cells). Also suggested is that each cell can alternate between these two functions. This appears to conflict with Llewellyn Jones, 'Fundamentals of Obstetrics and Gynaecology' although this is concentrating on mechanical factors during childbirth which could be explained by an increased concentration of pacemaker activity in the upper uterus during established labour.

Please amend the paragraph beginning at page 8, line 11 as follows:

FIG. 3 is a schematic illustration of an apparatus for simultaneously recording uterine activity, fECGs and Maternal ECG in accordance with the invention;

Please amend the paragraph beginning of page 9, line 23 as follows:

A commercially available electroencephalography (EEG) system is suitable for adaptation for acquisition and display of raw input composite data, i.e. signals from electrodes after processing at 30. Here the expression composite refers to the fact that an electrode signal is a mixture of

signals from different sources. The computer 36 is that from a portable EEG system (SYS98-Port24-CL) supplied by Micromed Electronics. UK Ltd. It is a battery-powered laptop computer running System '98 EEG recording and analysis software (SYS-98) under Microsoft Windows NT operating system. The SYS-98 software provides a convenient interface from the box 34 to display apparatus (screen, not shown) and to a data storage medium (hard disk). To implement this example of the invention, special purpose bespoke software has been developed and is also run on the computer 36: the bespoke software enables data recorded by EEG-specific software to be read and processed to separate uterine activity and fetal contributions. It also provides for display of parameters derived from such activity and contributions (e.g. duration, intensity, frequency spectrum for uterine activity and fetal heart-rate, PR, ORS, QT intervals for fECG). Operation of bespoke software will be described in more detail later. The type of computer 36 is clearly not critical however, all that is required is that it has sufficient processing capacity for running the recording, processing and display software and sufficient memory for storing the recorded data, processed results and the display itself. Preferably the computer should be portable. Not only does this provide for ease of transfer to patients, but portable computers may be run on batteries isolated from mains supply and associated noise in order to isolate them from electrical mains power supply and noise associated with that supply.